

ABSTRACT

Disclosed is an apparatus for precisely measuring optical characteristics of an eye to be examined, particularly an ophthalmologic characteristic measuring apparatus capable of observing a front portion of the eye as well as measuring optical characteristic of an irregular astigmatism component. The apparatus includes a first illuminating optical system, a first receiving optical system, a first converting member, a first light receiving unit, a second illuminating optical system, a second light receiving optical system, a second light receiving unit, and an arithmetic unit. The first illuminating optical system illuminates convergently a portion near the center of curvature of the cornea of an eye to be examined with first illuminating light rays emitted from a first illuminating light source. The first receiving optical system receives the first illuminating light rays reflected back from the cornea of the eye. The first converting member converts the reflected light rays into at least seventeen beams. The first light receiving unit receives a plurality of light beams converted by the first converting member. The second illuminating optical system projects an index having a specific pattern on the cornea of the eye with second illuminating light rays emitted from a second

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illuminating light source. The second light receiving optical system receives light rays reflected back from the cornea of the eye. The second light receiving unit receives the second illuminating light rays from the second light receiving optical system. The arithmetic unit determines the shape of the cornea near the center of the eye on the basis of an inclination angle of the light rays obtained by the first light receiving unit, and determines the shape of the cornea at the periphery of the eye on the basis of a position of the second light receiving unit, at which position the second light receiving unit receives the second illuminating light rays.

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